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GB A 2028606 GB 1304742 GB 1036565
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(58) Field of search
H2H
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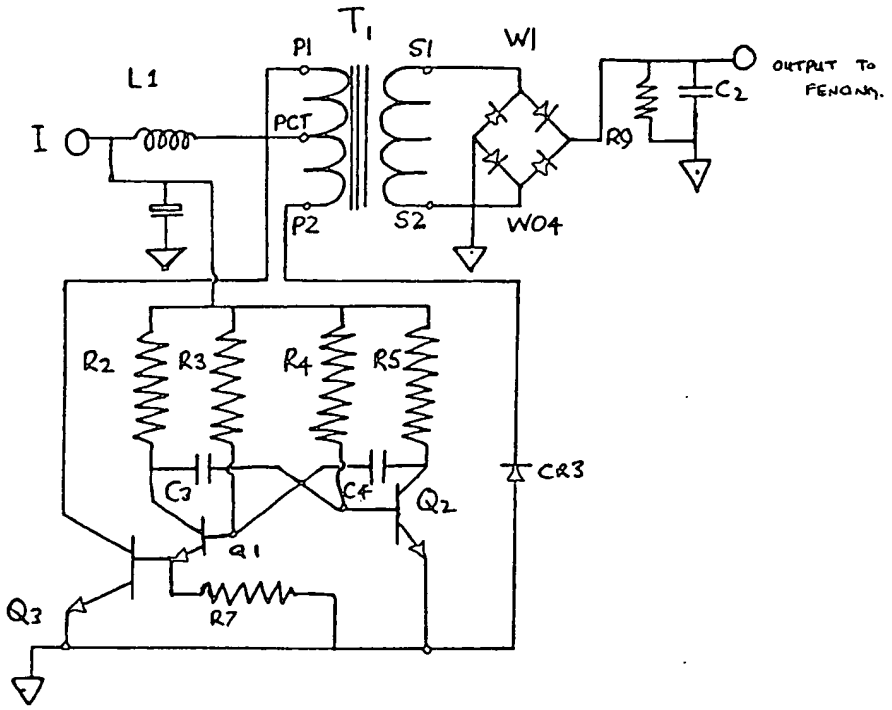
(54) Control circuit for electric fencing

(57) The circuit comprises an oscillator Q1, Q2, Q3 energised from a low voltage D.C. supply I and having its output connected to the primary of a transformer T_1, and a capacitor C_2 connected to the fencing and charged to a high voltage by means of a rectifier W1 connected to the secondary of the transformer T1. The charging time for the capacitor C2 may be about 3 to 4 seconds so that if a load is continuously applied to the fencing, it only receives a shock on initially contacting the fencing. The apparatus may be used to protect domestic goldfish ponds against cats, herons and other predators.



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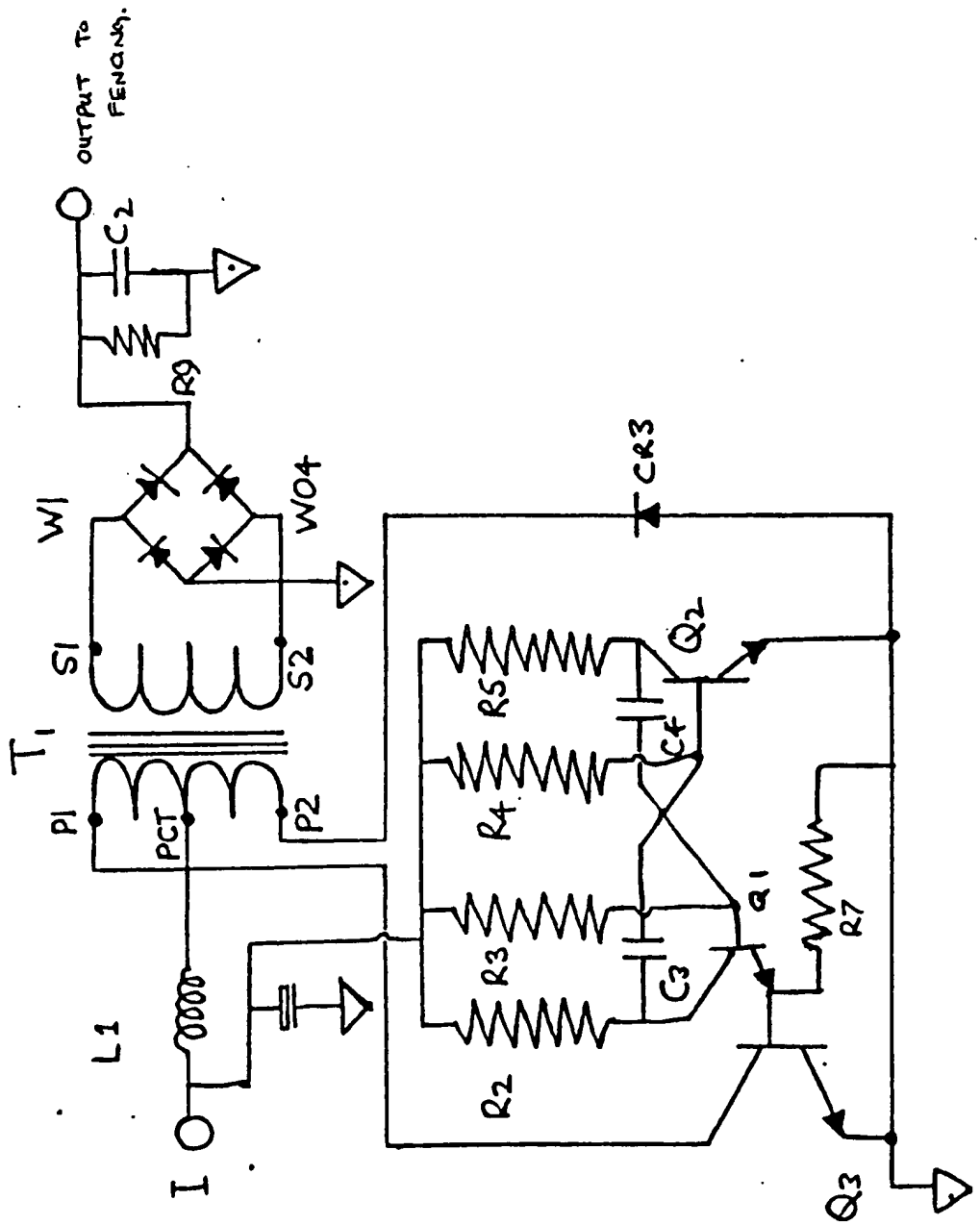
The drawing(s) originally filed was/were informal and the print here reproduced is taken from a later filed formal copy.
The claims were filed later than the filing date within the period prescribed by Rule 25(1) of the Patents Rules 1982.


OUTPUT TO FENANS.
C2
R9
W1
W04
S1
S2
T1
P1
PCT
P2
L1
I
CR3
Q2
R5
C4
R4
Q1
R7
R3
C3
R2
Q3

SPECIFICATION

Electric fencing

The present invention relates to electric fencing and more particularly to a control circuit therefor.

It is known to provide electric fencing, generally for the control of cattle, in which an electrical pulse is sent along the fencing periodically. It is a disadvantage of this type of electric fencing that, if the animal does not move away from the fence after receiving an electric shock, it receives either continuously or intermittently further shocks.

It is an object of the present invention to overcome the above disadvantage and provide electric fencing which gives a shock when it is touched but the current then decays quickly and no further shock is given until the fence is touched again after an interval.

The fencing is particularly, but not exclusively, intended for use domestically to protect fishponds against marauding cats.

According to a first aspect of the present invention, there is provided a control circuit for electric fencing comprising capacitor means to discharge at a comparatively high voltage when a load is applied to the fencing, a current input at a comparatively low voltage, means to oscillate said input current, a transformer fed by said oscillated input current, means to rectify the output of the transformer and to apply this DC output to the capacitor means to recharge it.

According to a second aspect of the present invention, there is provided electric fencing in which no current flows until it is touched.

An embodiment of the present invention will now be more particularly described by way of example and with reference to the accompanying drawing, which is a circuit diagram of the control circuit for the electric fencing.

Referring now to the drawing, input 1 is fed at 4.5 to 6.0 volts from a battery, a current limiter or some other stable DC source. The current is fed to a central point in the primary winding of a transformer through coil L1 of a preferred inductance 10 μH. The input current is also fed to an oscillator circuit comprising resistors R2, R3, R4, R5 and R7, capacitors C3 and C4 and transistors, Q1, Q2 and Q3, and diode CR3. The output of this oscillator circuit is fed to the ends of the primary winding of transformer T1. The preferred values for the components of the oscillator circuit are: R2–220 Ohms; R3 and R4 are each 5,600 Ohms; R5 is 680 Ohms; R7 is 1000 Ohms; C3 and C4 are each 0.0068 F; Q1 and Q2 are each BC184 type transistors; and Q3 is BC338 type.

The secondary winding of transformer T1 is tapped at S1 and S2 and fed to bridge rectifier WO4. As an alternative to the bridge rectifier, any alternative rectifier means may be used to obtain a direct current output.

The output from the rectifier is passed to capacitor C2 which has a value of 0.1 μF. This is bridged by a dummy load R9 of 220,000 Ohms. Capacitor C2 remains charged until a load is applied to the fencing connected to the output. When this happens, the capacitor C2 discharge very rapidly to earth thereby giving a shock to the animal or person touching the fencing. If the load is continously applied to the fencing, it receives only this initial shock. As soon as the load is removed from the fencing, the control circuit charges up capacitor C2 again and it is ready to give a second shock should a load be reapplied to the fencing. Charging time in the preferred circuit is approximately 3 to 4 seconds.

The output when the capacitor discharges is at 230 to 240 volts and a maximum of 15 milli-amps. The dummy load prevents the voltage exceeding 240 volts. Such a low current ensures that the animal or person touching the fencing does not suffer severely from the effects of the shock but is warned that it should not proceed beyond the fence or touch it again.

As stated above, the apparatus finds particular utility in protecting domestic goldfish ponds against cats, herons and other predators. In such circumstances, it is not desired to give the animal a continuous shock. Furthermore, the device will, in general, be used at some distance from a power supply and therefore it is important that it can be powered by a small battery if necessary. The circuit can be contained in a waterproof sealed container. A warning light may be provided to show when the fencing is operational.

CLAIMS

1. A control circuit for electric fencing comprising capacitor means to discharge at a comparatively high voltage when a load is applied to the fencing, a current input at a comparatively low voltage, means to oscillate said input current, a transformer fed by said oscillated input current, and means to rectify the output of the transformer and to apply this DC output to the capacitor means to recharge it.

2. A control circuit substantially as described herein with reference to and as illustrated in the accompanying drawings.

3. An electric fence incorporating a control circuit according to Claim 1 or Claim 2.

4. An electric fence according to Claim 3 adapted to cover a fish pond.

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